REMARKS/ARGUMENTS

Applicants are appreciative of the indication that previous rejections were withdrawn, that Claims 25-35 are allowed, and that Claims 13, 20-23, and 64 contain allowable subject matter.

It is believed that the other pending claims are likewise allowable. Several amendments have been made and arguments are presented in support of this belief. In particular, Claims 1, 37, and 59 have been amended to indicate that only a fountain solution is used in development. This feature is clear from the original disclosure in Cols. 1 (lines 36-37 and 64-65), 2 (lines 47-48 and 58-62), 3 (lines 66-67), 4 (lines 1-3), and 7 (lines 5-7) of the issued patent. It is clear from this teaching that a lithographic printing ink is not used during development. Rather, development is achieved by using only the fountain solution on the dampening rollers.

Claims 1, 27, and 59 have also been amended to clarify that the claimed methods are "direct-to-press" as described in Cols. 2 (lines 13-16) and 3 (lines 10-22) of the issued patent, and such systems differ from those utilizing an image mask or graphic arts film (Col. 1, lines 10-12).

Claims 1 and 37 have also been amended to make it clear that the printing form used in the claimed methods is a "lithographic" printing form that relies upon the mutual repulsion of water (fountain solution) and lithographic printing ink so that hydrophilic regions (such as a hydrophilic lithographic support) attract water (fountain solution) and repel the lithographic printing ink. That the printing form is "lithographic" by definition, as opposed to flexographic for example, is described in Col. 1 (lines 32-40) of the issued patent.

Rejections Under 35 U.S.C. §103(a)

Several unpatentability rejections have been made, each of which is addressed in turn. Applicants will provide their full arguments against the first rejection, but for the sake of brevity, they will respond to the remaining rejections by referencing the earlier arguments since essentially the same prior art is cited for each rejection.

The primary premise of Applicants' position is that the citation and combination of several references is in error and that a skilled artisan would not,

in view of the requirements of the Supreme Court standards for patentability stated in both the *Graham v. John Deere* and *KSR* decisions, consult and/or combine the art as the Examiner has done, or for the reasons stated by the Examiner.

Rejections:

I. Claims 1, 2, 4, 6-12, 14-16, and 24 have been rejected as unpatentable over U.S. 5,756,258 (Yamaoka et al.) in view of U.S. 5,654,125 (Fan et al.), U.S. 4,173,554 (Sulzberg), and U.S. 5,607,816 (Fitzgerald et al.).

II. Claim 5 has been rejected as unpatentable over Yamaoka et al. in view of Fan et al. Sulzberg, Fitzgerald et al., and U.S. 5,492,059 (Reichel et al.).

III. Claims 17-19 have been rejected as unpatentable over Yamaoka et al. in view of Fan et al., Sulzberg, Fitzgerald et al., and U.S. 3,847,614 (Mattor).

IV. Claims 37-41, 44, 45, 50, 53, 54, 56, and 58 have been rejected as unpatentable over Yamaoka et al. in view of Fan et al. and Fitzgerald et al.

V. Claims 43, 43, and 46-49 have been rejected as unpatentable over Yamaoka et al. in view of Fan et al., Fitzgerald et al., and Sulzberg.

VI. Claims 51 has been rejected as unpatentable over Yamaoka et al. in view of Fan et al., Fitzgerald et al, and Mattor.

VII. Claims 59-61 and 63 has been rejected as unpatentable over Yamaoka et al. in view of Mattor, Fan et al., and Fitzgerald et al.

VIII. Claim 65 has been rejected as unpatentable over Yamaoka et al. in view of Mattor, Fan et al., Fitzgerald et al., and U.S. 5,317.970 (Nussel et al.).

Applicants' Claimed Invention:

Referring to the three rejected independent claims present in this reissue application, Applicants' invention relates to direct-to-press methods of making lithographic printing forms (such as lithographic printing plates and printing sleeves) and their use in printing.

In Claim 1, as amended, the lithographic printing form is prepared in a direct-to-press system by coating a radiation-sensitive ink (e.g. containing a radiation absorbing compound that is a phthalocyanine pigment, and an IR absorbing dye) onto a hydrophilic support, imaging by digital laser means (either IR or visible imaging), and developing on-press using dampening rollers that are covered only with a lithographic fountain solution to remove unexposed areas of the ink coating and leaving an oleophilic image in the exposed areas of the ink coating. It should be noted that the lithographic printing ink is used for printing. It is not used for on-press development that is carried out using only the lithographic fountain solution. Thus, development is not achieved using a combination of a fountain solution and a lithographic printing ink.

Claim 37 is directed to a direct-to-press method of preparing a printing form in which a coating of a radiation-sensitive composition comprising a resin and IR absorbing material is applied to a lithographic support. A digital laser means is used for imaging, and development is carried out *in situ* on a printing press using only a lithographic fountain solution, leaving an oleophilic image in the exposed areas of the radiation-sensitive coating.

Claim 59 is directed to a direct-to-press method of printing with similar steps as allowed Claim 25 but using the coated composition of Claim 37. Development is carried out on-press using only the lithographic fountain solution.

All of the claimed methods are "direct-to-press" meaning that imaging signals from a computer are directed at the printing form precursor without means of a masking element or graphic arts films that was widely used in the industry for decades.

The claimed methods require the use of an "imageable coating" to be applied to a lithographic or hydrophilic support to provide an imageable layer that is then imaged using a digital laser (computer-directed). Development is carried out on-press, e.g. using dampening rollers or other means with *only* a lithographic fountain solution, to remove unexposed areas of the applied layer and to provide an oleophilic printing image. A combination of fountain solution and lithographic printing ink is not used for development. The lithographic printing ink is used only for printing of the desired impressions. As pointed out in the specification (Col. 3, lines 10ff), the claimed invention provides a number of

advantages including reduced imaging time, reduced run length time, and control of digital imaging parameters.

It is also to be noted that the claimed methods are directed to preparing and using lithographic printing forms, not flexographic printing forms. The differences for making, imaging, and printing with each type of printing forms are well known and accepted as distinguishable technical fields as even the USPTO has recognized with its classification system. A worker having ordinary skill in lithography would certainly know about flexography, but because of the fundamental differences, she/he would not readily consult flexographic art for suggestions about technology to apply in lithography. The two types of printing systems represent very different fields of endeavor and product lines in the industry.

Rejection I:

The Office Action argues that Yamaoka et al. teaches radiation-sensitive compositions containing a radiation-sensitive resin and having a high sensitivity to visible and near IR radiation that can be coated onto a lithographic support, irradiated with light (visible or near-IR lasers), and developed with aqueous solutions of organic alkali to form printing plates. Unexposed portions of the coating are removed with a developer. The Office Action also argues that the "colorant" used in the photopolymerizable composition of Yamaoka et al. is a radiation-sensitive "ink" that can be a pigment. The Office Action admits that Yamaoka et al. fails to teach the use of digital laser means, a phthalocyanine pigment, and on-press development using dampening rollers covered with a fountain solution.

The Office Action also argues that Sulzberg teaches the use of a phthalocyanine pigment, Fan et al. teaches the use of a digital laser to quickly make corrections, and Fitzgerald et al. teaches these of on-press development by the action of fountain solution and lithographic ink. It is further argued that Yamaoka et al. suggests the use of alkaline solutions and Fitzgerald et al. also teaches either conventional alkaline development or on-press development.

It is then argued (page 5) that based on the teachings in Fitzgerald et al., it would have been obvious to one skilled in the art to perform the on-press development step in Yamaoka et al. using fountain solution and lithographic ink

that are deposited onto dampening rollers so as to prevent the time and labor consuming conventional development process. Therefore, Yamaoka et al. and Fitzgerald et al are considered to render obvious an *in-situ* development step done on a printing press using lithographic fountain solution-covered dampening rollers.

Applicants' Rebuttal:

Yamaoka et al. describes a photopolymerizable composition that is subjected to irradiation at visible or higher wavelengths. The unexposed portions of the photosensitive sample are removed with a conventional alkaline developer (not fountain solution) in an off-press mode (Col. 14, lines 28-33). Thus, this composition in Yamaoka et al. is "negative-working" as opposed to "positive-working" where the exposed regions are removed during development. The Office Action admits that Yamaoka et al. fails to teach or suggest two critical features of the claimed invention; use of digital laser imaging, and development using only a fountain solution.

The Office Action attempts to remedy this deficiency by citing the teaching in both Fan et al. and Fitzgerald et al. Applicants respectfully submit that there is no technical reasons for a skilled artisan to consult and combine the teachings in either references with Yamaoka et al. Moreover, even if Yamaoka et al. is combined with the references, the combined teaching still fails to teach or suggest the presently claimed invention, and the reasoning applied in the Office Action is in error from a technical understanding of the teachings.

First of all, Fan et al. fails to teach or suggest the use of digital imaging of a negative-working lithographic printing form. As it quite clear from the entire teaching in Fan et al., it relates to laser ablation of a printing form to provide a flexographic printing plate. Nothing in such teaching about flexography would suggest to a skilled artisan that the same digital laser imaging should be applied to lithography. It is only a speculation provided by the Office Action, or it is merely use of Applicants' teaching, that would make such a technical and illogical connection. As is well known, ablative imaging removes imaging material in the imaged areas—that's the well understood definition of "ablation". Imaged material is removed. The result in an ablated image is a "positive" image because only the imaged areas are removed. This is the direct opposite of

"negative-working" elements wherein the imaged areas are retained. Ablation cannot be used to form a "negative" image by its very nature. Thus, there is no conceivable reason for a skilled worker in lithography to consult Fan et al. for any purpose, let alone for a direct laser imaging technique. For this reason, combining Fan et al. with Yamaoka et al., which Applicants agree is negative-working and lithography, is illogical.

Secondly, while Applicants believe that the teaching in Fitzgerald et al. is not properly combined with Yamaoka et al., Applicants also submit that even if combined, the teaching fails to render Applicants' claimed method unpatentable.

Fitzgerald et al. is directed to imaging and developing a lithographic printing form. Imaging is carried out using various forms of radiation, but nothing is suggested about "direct laser" imaging (Col. 10, lines 40-48). Specifically, there is no suggestion of direct laser imaging using infrared radiation. The Examples of Fitzgerald et al. largely use actinic (visible) radiation, and Example 2 uses a mask to provide the image in the plate. This is not indicative of "direct laser imaging". Rather, Fitzgerald et al. is representative of old teaching prior to "direct laser imaging" or "computer-to-press" imaging like that of the presently claimed invention. Thus, the combination of Fitzgerald et al. with Yamaoka et al. would merely suggest the use of actinic or near-infrared imaging that is not "direct laser" imaging (or computer-to-press). Yamaoka et al. itself teaches in its Examples that imaging is carried out using various filters that can act like mask elements, just like Fitzgerald et al. Thus, both references teach the *passé* technology that "computer-to-press" was designed to avoid.

It is also important to understand that Fitzgerald et al. fails to teach Applicants' technique for using only a fountain solution on the dampening rollers for development. The Office Action admits as much as it cites the relevant portions of the reference (Col. 11) where on-press development is described using a combination of a fountain solution and lithographic printing ink. This portion of teaching is also consistent with the remainder of the reference: for example, Col. 3 (lines 53-57 and 61-66), Col. 4 (lines 1-11, 31-38, and 57-61), Col. 5 (lines 32-35 and 54-60), Col. 6 (lines 40-48), Col. 7 (lines 25-29), and the Examples (e.g. Col. 12, lines 58-60). The Office Action has pointed to no teaching in Fitzgerald et al. that suggests that *only* a fountain solution is to be used for on-press

development. Instead, the weight of evidence in Fitzgerald et al. suggests just the opposite. So, if as the Office Action says, the on-press development step of Fitzgerald et al. would be useful for processing the imaged compositions of Yamaoka et al., the end result is still not suggestive of Applicants' claimed methods, which provide advantages since no lithographic ink is necessary in the development step. If the on-press development teaching of Fitzgerald et al. represents an improvement over the conventional alkaline development of Yamaoka et al., then Applicants' claimed invention represents still another inventive improvement over Fitzgerald et al.

In summary, Fan et al. is not relevant to the presently claimed invention—it is directed to flexography, not lithography, and is improperly cited.

The remaining three references, Yamaoka et al., Sulzberg, and Fitzgerald et al., even if combined, fail to teach or suggest Applicants' claimed invention that is directed to "computer-to-press" imaging using a "direct laser" imaging means, and development is carried out using only a fountain solution, not a combination of fountain solution and lithographic printing ink.

For these reasons, the rejection of Claim 1 over Yamaoka et al. with Sulzberg, Fan et al., and Fitzgerald et al. is in error and should be withdrawn.

Since claims 2, 4, 6-12, 14-16, and 24 ultimately depend on Claim 1, Applicants reiterate their argument with respect to Yamaoka et al., Sulzberg, Fan et al., and Fitzgerald et al. Applicants submit that these claims are also patentable over the teaching in the four references for at least the same reasons as Claim 1 is patentable and respectfully request this rejection be withdrawn for all of the claims.

Response to Rejection II:

Claim 5 is said to be unpatentable in view of the four references cited for Rejection I taken in addition with Reichel. The Office Action argues that Reichel teaches the use of sleeve-shaped printing forms and that it would be obvious to use such printing forms in the teaching of Yamaoka et al.

Since Claim 5 depends on Claim 1, Applicants reiterate their arguments presented above with respect to the rejection of Claim 1 (Rejection I). Furthermore, Reichel does not teach or suggest the subject matter of Claim 1 in which the developing step is performed on a printing press using only a fountain

solution. Reichel teaches an offset printing form that includes at least one printing plate that is in the form of a sleeve. While Reichel is interesting teaching about certain printing forms, it fails to supply the teaching missing in Yamaoka et al. relating to on-press development with only a lithographic fountain solution, and it fails to provide any teaching or motivation to direct a skilled artisan to combine the teaching of Fitzgerald et al. and Fan et al. with the rest of the cited art, and particularly with Yamaoka et al. Thus, the rejection of Claim 5 should be withdrawn for the same reasons explained above.

Response to Rejection III:

The Office Action has rejected Claims 17-19 as being unpatentable over the four references cited in Rejection I with Mattor. Since Claims 17-19 ultimately depend on Claim 1, Applicants reiterate their arguments noted above with respect to the rejection of Claim 1 (Rejection I). The Office Action argues that it would be obvious from Mattor to apply a certain predetermined thickness of the composition in Yamaoka et al. for a desired printing run length and that it would require only routine skill to provide a mechanical or automatic means to do this. While the Office Action points to teaching about a relationship of coating thickness and run length (Col. 1, lines 37-41), it fails to point to teaching that would combine that feature with all of the features of Claim 1, upon which Claims 17-19 depend. Thus, Mattor does not teach or suggest the subject matter of Claim 1 in which the developing step is performed on a printing press using only a lithographic fountain solution, and it fails to provide motivation to overcome the deficiencies pointed out above in relation to the teaching in the other 4 cited references. Applicants respectfully request that this rejection be withdrawn for the same reasons explained above.

Response to Rejection IV:

Claims 37-41, 44, 45, 47, 50, 53, 54, 56, and 56 are considered unpatentable over Yamaoka et al., Fan et al. and Fitzgerald et al. Claim 37 is the sole independent claim in this group of claims and it is the focus of Applicants' arguments.

The Office Action again admits the deficiency in Yamaoka et al. by stating that Yamaoka et al. does not teach the use of digital laser imaging and

development step on-press. These deficiencies are considered to be supplied by Fan et al. and Fitzgerald et al. However, as pointed out above with regard to Rejection I, Applicants respectfully submit that Fan et al. is not properly cited. It is related to flexography that of necessity ablates the imaging layer in imaging areas and thus provide a "positive" image. Flexographic technology is not necessarily convertible to use in lithography. Merely finding the term "digital laser" in a reference outside the technology of the claimed invention does not render it properly cited..

In addition, as pointed out about, the teaching of on-press development using a combination of a fountain solution and lithographic printing ink as described in Fitzgerald et al. does not overcome the deficiencies in Yamaoka et al. Using the combination of two immiscible fluids for on-press development, even with the compositions of Yamaoka et al. does not suggest Applicants' claimed invention where only a fountain solution is used for on-press development. This improvement of using only a single, simple fluid for development over a combination of fluids is not taught or suggested in the combined art.

For these reasons, the rejection of Claim 37 over Yamaoka et al. with Fan et al. and Fitzgerald et al. is in error and should be withdrawn.

Since claims 38-41, 44, 50, 47, 53, 54, 56, and 56 ultimately depend on Claim 37, Applicants reiterate their arguments with respect to Yamaoka et al. Fan et al., and Fitzgerald et al. Applicants submit that these claims are also patentable over the teaching in the three references for at least the same reasons as Claim 37 is patentable and respectfully request that the rejection of all of these claims be withdrawn.

Response to Rejection V:

Claims 42, 43, and 46-49 are also rejected over the combined teaching of Yamaoka et al., Fan et al., Fitzgerald et al., and Sulzberg. Since Claims 42, 43, and 46-49 ultimately depend on Claim 37, Applicants reiterate the arguments made above with respect to the rejection of Claim 37 over Yamaoka et al., Fan et al., and Fitzgerald et al. (Rejection IV). Sulzberg describes various aqueous printing inks containing carbon black of phthalocyanine pigments but does not teach or suggest a method of digital laser imaging a lithographic printing

form with infrared radiation followed by on-press development using only a fountain solution. Even if the pigments of Sulzberg could be used in the imaging compositions and methods of Yamaoka et al., that extension of Yamaoka et al. still has deficiencies that are not overcome by Fan et al. and Fitzgerald et al. Thus, Applicants request that the rejection of Claims 42, 43, and 46-49 be withdrawn.

Response to Rejection VI:

Claims 51 has been rejected similarly to the rejection of Claims 17-19 (Rejection III). Since Claim 51 depends on claim 37, Applicants reiterate the arguments made above with respect to the rejection of Claim 37 over Yamaoka et al., Fan et al. and Fitzgerald et al. (Rejection IV). As noted above, Mattor describes lithographic printing plates having a photopolymer composition and may suggest a relationship between coating thickness and printing run length. However, Mattor does not teach or suggest a method of imaging the lithographic printing plates with a digital laser followed by on-press development using only a fountain solution. In other words, Mattor fails to overcome the described deficiencies in the combined teaching of Yamaoka et al. Fan et al. and Fitzgerald et al. Applicants respectfully request that the rejection of Claim 51 be withdrawn.

Response to Rejection VII:

Claims 59-61 and 63 have been rejected as unpatentable for essentially the same reasons presented for Rejection I except that Mattor is cited instead of Sulzberg. For the sake of brevity, Applicants will not repeat all of those arguments but they are equally applied here. It is clear that the Office Action recognizes critical defects in Yamaoka et al. and attempts to use the other cited references to supply the missing teaching. However, as pointed out above, Fan et al. is improperly applied since it has nothing to do with lithography. Moreover, Fitzgerald et al. is defective because it teaches on-press development only with a combination of a fountain solution and lithographic printing ink. Applicants' claimed method requires only a fountain solution on the dampening rollers. Nothing in Mattor will make up for the lack of teaching in the other cited references. Thus, as stated for the previous rejections, the rejection of Claim 59

and claims dependent thereon over the combination of the four references should be withdrawn.

Response to Rejection VIII:

Finally, Claim 65 has been rejected as unpatentable over Yamaoka et al., Mattor, Fan et al., Fitzgerald et al., and Nussel et al. Since Claim 65 ultimately depends on Claim 37, Applicants reiterate the arguments made above with respect to the rejection of Claim 37. Nussel et al. cited for its teaching about erasing and reusing printing plates. However, Nussel et al. does not teach or suggest a method of imaging a lithographic printing plate with a digital laser followed by on-press development using only a fountain solution. Nothing in Nussel et al. overcomes the deficiencies of the other four references. Moreover, Claim 65 is dependent upon Claim 59 that is clearly patentable. Thus, Applicants respectfully request that this rejection be withdrawn.

Response to Arguments on Pages 15-16 of Office Action:

The Office Action argues that there is no evidence in the record that the compositions of Yamaoka et al. could not be developed on-press using fountain solutions and lithographic printing ink, especially since Fitzgerald et al. teaches either on-press or off-press development.

Applicants would respond that while no experimental evidence is present and Yamaoka et al. does not explicitly disclaim on-press development, the plain teaching of Yamaoka et al. is sufficient to suggest to a skilled artisan that its compositions are not designed for or compatible with on-press development

It should be appreciated that one skilled in the art of lithography, which includes the present invention as well as most of the cited art (not Fan et al.), is not merely a person with a Bachelor of Science degree who has worked in the art for a few years. Most of the skilled artisans in lithography have obtained Ph.D. degrees in organic chemistry, polymeric chemistry, or the like, and have also worked in the field for at least four or five years. One so skilled in this art would read Yamaoka et al. with a view different from that portrayed in the Office Action, and would take away a much different understanding of its teaching.

On-press developability requires unique chemistry in the imaging layer for suitable solubility in the fountain solution (present invention), or in a

combination of fountain solution and lithographic printing ink (e.g. Fitzgerald et al.). Yet, solubility must be balanced with durability so the user can actually get a suitable number of impressions from the inked printing surface. This need for balancing is clearly described in Cols. 1-4 of Fitzgerald et al. (e.g. Col. 3, lines 19ff). Compromising durability to obtain on-press development is generally unacceptable. Fitzgerald et al. points out (Col. 1) that in some instances, attempts to achieve on-press developability have been directed at specific polymeric binders. Fitzgerald et al. suggests that they got around the polymeric binder problem by incorporating non-polymeric plasticizers with or without surfactants. A wide variety of polymers are described in this reference for on-press development (Col. 9, lines 8ff), but they are not used without the plasticizers that are the focus of the patent.

Yamaoka et al. teaches hardly anything all about polymeric binders except some common classes used for off-press development (see Col. 12, line 66 to Col. 13, line 12). In the examples, Yamaoka et al. teaches the use of a high molecular weight (150,000) polymethacrylate polymer (Example 1, Col, 14, lines 62-66 and similar teaching in Example 5) that a skilled worker in the art (i.e. one likely to have a Ph.D. and several years of experience in the field) would recognize as not useful for on-press development. The chemical composition and high molecular weight diminish needed solubility.

Nothing in Yamaoka et al. would suggest to a worker skilled in the art that it's chemistry would have on-press developability, or that its teaching could be readily combined with Fitzgerald et al. to obtain such properties. The polymer list in Yamaoka et al. is "common" and does not provide any guidance for anything other than off-press developability. The mere fact that Yamaoka et al. fails to explicitly disclaim on-press developability is irrelevant to a skilled artisan. That person would know what it teaches and what it does not teach from the academic and industrial knowledge and wisdom gained from actively working in the field.

While the "motivation in the art" test is no longer required to support a Section 103 rejection, the USPTO must still take into account the level of skill in the art and what the art would teach a person with that level of skill under the seminal *Graham v. John Deere* Supreme Court case. Merely reading certain words in a publication does not render those words suggestive of a

claimed invention without consider several other factors including the level of skill in the art. There has certainly been nothing suggested in the Office Action about what the level of skill is in lithography. One finds only the stock statements that a skilled worker would do such and such without stating what that skill may be.

Moreover, it takes more than finding individual pieces of a claimed invention in different references for them to be properly combined and the combined teaching to render a claimed invention unpatentable.

Yamaoka et al. clearly teaches a negative-working imaging chemistry, but as previously stated, it fails to teach that its chemistry is on-press developable, as understood by one having skill in the art. Fitzgerald et al. teaches on-press developability, but it fails to suggest how it can be done with the compositions of Yamaoka et al. using only a fountain solution. The best that one can say about the mere combination of words in Yamaoka et al. and Fitzgerald et al. is that one could speculate that the plasticizers of Fitzgerald et al. could be used in the chemistry of Yamaoka et al. possibly to achieve on-press developability using a combination of fountain solution and lithographic printing ink. One skilled in the art would not find this to be a credible suggestion. If that combination teaching really could do what is speculated in the Office Action, the industry would have been taken by storm long ago with a commercial product containing the combined teachings. That has not occurred despite the fact that both patents were granted over 10 years ago. Thus, merely combining words from publications, without an appreciation of which those words actually teach to one skilled in the art, is an improper basis for supporting an unpatentability rejection.

In view of the foregoing amendments and remarks, reconsideration of this reissue application is respectfully requested. A prompt and favorable action by the examiner is earnestly solicited.

Respectfully submitted,

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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.